

## REMARKS/ARGUMENTS

### I. Amendment to the Specification

The "Description of the Figures" section has been amended so the figure references correspond to the amended figure legends of some of the replacement drawings (see below).

None of these changes introduces new matter.

### II. Formal Drawings

A complete set of formal drawings are attached. The figure references for FIGS. 9, 12, 13, 14, 30, 36, 42, 46, 47, 50, 51 and 53 that each include multiple sheets have been amended so the additional sheets no longer say "continued" but instead are labeled as sheets "A", "B," "C", etc.

Applicants also submit a correction to Figure 53. Figure 53 shows the DNA sequence of plasmid pGRN121, and the polypeptide encoded by this sequence (see the original specification at, e.g., page 83, lines 3-6, and page 16, lines 2-3). Applicants sequenced plasmid pGRN121, which was deposited with the American Type Culture Collection as ATCC accession #209016 on May 6, 1997, prior to the filing of the subject application. The deposit is noted in the original specification at page 82, lines 8-16. Although Applicants correctly determined the protein coding sequence of pGRN121, three nucleotide errors of an editorial or typographical nature were introduced during the preparation of the documents used as the basis for Figure 53. As noted in the accompanying annotated sheets, the codon at position 578 was transcribed as "CCG (pro)" and has been corrected to "AAG (lys)," and the codon at position 958 was transcribed as "GTC (val)" and has been corrected to "CTC (leu)." The coding sequence of pGRN121 is an inherent property of the deposited plasmid, providing basis for this correction, and there is no new matter added by this correction.

The sequence listing submitted January 18, 2002 provides the nucleotide and amino acid sequences as shown in the corrected version of Figure 53. Thus, no changes to the sequence listing are required.

Appl. No. 10/053,758  
Amdt. dated August 12, 2004  
Preliminary Amendment

PATENT

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 303-571-4000.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Scott Ausenhus", written over the printed name.

Scott L. Ausenhus  
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## FIGURE 53

1  
 met  
 GCAGCGCTGCGTCCTGCTGCGCACGTGGGAAGCCCTGGCCCCGGCCACCCCCGCG ATG

10  
 pro arg ala pro arg cys arg ala val arg ser leu leu arg ser  
 CCG CGC GCT CCC CGC TGC CGA GCC GTG CGC TCC CTG CTG CGC AGC

20 30  
 his tyr arg glu val leu pro leu ala thr phe val arg arg leu  
 CAC TAC CGC GAG GTG CTG CCG CTG GCC ACG TTC GTG CGG CGC CTG

40  
 gly pro gln gly trp arg leu val gln arg gly asp pro ala ala  
 GGG CCC CAG GGC TGG CGG CTG GTG CAG CGC GGG GAC CCG GCG GCT

50 60  
 phe arg ala leu val ala gln cys leu val cys val pro trp asp  
 TTC CGC GCG CTG GTG GCC CAG TGC CTG GTG TGC GTG CCC TGG GAC

70  
 ala arg pro pro pro ala ala pro ser phe arg gln val ser cys  
 GCA CGG CCG CCC CCC GCC GCC CCC TCC TTC CGC CAG GTG TCC TGC

80 90  
 leu lys glu leu val ala arg val leu gln arg leu cys glu arg  
 CTG AAG GAG CTG GTG GCC CGA GTG CTG CAG AGG CTG TGC GAG CGC

100  
 gly ala lys asn val leu ala phe gly phe ala leu leu asp gly  
 GGC GCG AAG AAC GTG CTG GCC TTC GGC TTC GCG CTG CTG GAC GGG

110 120  
 ala arg gly gly pro pro glu ala phe thr thr ser val arg ser  
 GCC CGC GGG GGC CCC CCC GAG GCC TTC ACC ACC AGC GTG CGC AGC

130  
 tyr leu pro asn thr val thr asp ala leu arg gly ser gly ala  
 TAC CTG CCC AAC ACG GTG ACC GAC GCA CTG CGG GGG AGC GGG GCG

			140										150		
trp	gly	leu	leu	leu	arg	arg	val	gly	asp	asp	val	leu	val	his	
TGG	GGG	CTG	CTG	CTG	CGC	CGC	GTG	GGC	GAC	GAC	GTG	CTG	GTT	CAC	
								160							
leu	leu	ala	arg	cys	ala	leu	phe	val	leu	val	ala	pro	ser	cys	
CTG	CTG	GCA	CGC	TGC	GCG	CTC	TTT	GTG	CTG	GTG	GCT	CCC	AGC	TGC	
			170										180		
ala	tyr	gln	val	cys	gly	pro	pro	leu	tyr	gln	leu	gly	ala	ala	
GCC	TAC	CAG	GTG	TGC	GGG	CCG	CCG	CTG	TAC	CAG	CTC	GGC	GCT	GCC	
								190							
thr	gln	ala	arg	pro	pro	pro	his	ala	ser	gly	pro	arg	arg	arg	
ACT	CAG	GCC	CGG	CCC	CCG	CCA	CAC	GCT	AGT	GGA	CCC	CGA	AGG	CGT	
			200										210		
leu	gly	cys	glu	arg	ala	trp	asn	his	ser	val	arg	glu	ala	gly	
CTG	GGA	TGC	GAA	CGG	GCC	TGG	AAC	CAT	AGC	GTC	AGG	GAG	GCC	GGG	
								220							
val	pro	leu	gly	leu	pro	ala	pro	gly	ala	arg	arg	arg	gly	gly	
GTC	CCC	CTG	GGC	CTG	CCA	GCC	CCG	GGT	GCG	AGG	AGG	CGC	GGG	GGC	
			230										240		
ser	ala	ser	arg	ser	leu	pro	leu	pro	lys	arg	pro	arg	arg	gly	
AGT	GCC	AGC	CGA	AGT	CTG	CCG	TTG	CCC	AAG	AGG	CCC	AGG	CGT	GGC	
								250							
ala	ala	pro	glu	pro	glu	arg	thr	pro	val	gly	gln	gly	ser	trp	
GCT	GCC	CCT	GAG	CCG	GAG	CGG	ACG	CCC	GTT	GGG	CAG	GGG	TCC	TGG	
			260										270		
ala	his	pro	gly	arg	thr	arg	gly	pro	ser	asp	arg	gly	phe	cys	
GCC	CAC	CCG	GGC	AGG	ACG	CGT	GGA	CCG	AGT	GAC	CGT	GGT	TTC	TGT	
								280							
val	val	ser	pro	ala	arg	pro	ala	glu	glu	ala	thr	ser	leu	glu	
GTG	GTG	TCA	CCT	GCC	AGA	CCC	GCC	GAA	GAA	GCC	ACC	TCT	TTG	GAG	

FIGURE 53 (cont.)

														290															300
gly	ala	leu	ser	gly	thr	arg	his	ser	his	pro	ser	val	gly	arg															
GGT	GCG	CTC	TCT	GGC	ACG	CGC	CAC	TCC	CAC	CCA	TCC	GTG	GGC	CGC															
														310															
gln	his	his	ala	gly	pro	pro	ser	thr	ser	arg	pro	pro	arg	pro															
CAG	CAC	CAC	GCG	GGC	CCC	CCA	TCC	ACA	TCG	CGG	CCA	CCA	CGT	CCC															
														320															330
trp	asp	thr	pro	cys	pro	pro	val	tyr	ala	glu	thr	lys	his	phe															
TGG	GAC	ACG	CCT	TGT	CCC	CCG	GTG	TAC	GCC	GAG	ACC	AAG	CAC	TTC															
														340															
leu	tyr	ser	ser	gly	asp	lys	glu	gln	leu	arg	pro	ser	phe	leu															
CTC	TAC	TCC	TCA	GGC	GAC	AAG	GAG	CAG	CTG	CGG	CCC	TCC	TTC	CTA															
														350															360
leu	ser	ser	leu	arg	pro	ser	leu	thr	gly	ala	arg	arg	leu	val															
CTC	AGC	TCT	CTG	AGG	CCC	AGC	CTG	ACT	GGC	GCT	CGG	AGG	CTC	GTG															
														370															
glu	thr	ile	phe	leu	gly	ser	arg	pro	trp	met	pro	gly	thr	pro															
GAG	ACC	ATC	TTT	CTG	GGT	TCC	AGG	CCC	TGG	ATG	CCA	GGG	ACT	CCC															
														380															390
arg	arg	leu	pro	arg	leu	pro	gln	arg	tyr	trp	gln	met	arg	pro															
CGC	AGG	TTG	CCC	CGC	CTG	CCC	CAG	CGC	TAC	TGG	CAA	ATG	CGG	CCC															
														400															
leu	phe	leu	glu	leu	leu	gly	asn	his	ala	gln	cys	pro	tyr	gly															
CTG	TTT	CTG	GAG	CTG	CTT	GGG	AAC	CAC	GCG	CAG	TGC	CCC	TAC	GGG															
														410															420
val	leu	leu	lys	thr	his	cys	pro	leu	arg	ala	ala	val	thr	pro															
GTG	CTC	CTC	AAG	ACG	CAC	TGC	CCG	CTG	CGA	GCT	GCG	GTC	ACC	CCA															
														430															
ala	ala	gly	val	cys	ala	arg	glu	lys	pro	gln	gly	ser	val	ala															
GCA	GCC	GGT	GTC	TGT	GCC	CGG	GAG	AAG	CCC	CAG	GGC	TCT	GTG	GCG															

## FIGURE 53 (cont.)

												440					450
ala	pro	glu	glu	glu	asp	thr	asp	pro	arg	arg	leu	val	gln	leu			
GCC	CCC	GAG	GAG	GAG	GAC	ACA	GAC	CCC	CGT	CGC	CTG	GTG	CAG	CTG			
												460					
leu	arg	gln	his	ser	ser	pro	trp	gln	val	tyr	gly	phe	val	arg			
CTC	CGC	CAG	CAC	AGC	AGC	CCC	TGG	CAG	GTG	TAC	CGC	TTC	GTG	CGG			
												470					480
ala	cys	leu	arg	arg	leu	val	pro	pro	gly	leu	trp	gly	ser	arg			
GCC	TGC	CTG	CGC	CGG	CTG	GTG	CCC	CCA	GGC	CTC	TGG	GGC	TCC	AGG			
												490					
his	asn	glu	arg	arg	phe	leu	arg	asn	thr	lys	lys	phe	ile	ser			
CAC	AAC	GAA	CGC	CGC	TTC	CTC	AGG	AAC	ACC	AAG	AAG	TTC	ATC	TCC			
												500					510
leu	gly	lys	his	ala	lys	leu	ser	leu	gln	glu	leu	thr	trp	lys			
CTG	GGG	AAG	CAT	GCC	AAG	CTC	TCG	CTG	CAG	GAG	CTG	ACC	TGG	AAG			
												520					
met	ser	val	arg	asp	cys	ala	trp	leu	arg	arg	ser	pro	gly	val			
ATG	AGC	GTG	CGG	GAC	TGC	GCT	TGG	CTG	CGC	AGG	AGC	CCA	GGG	GTT			
												530					540
gly	cys	val	pro	ala	ala	glu	his	arg	leu	arg	glu	glu	ile	leu			
GGC	TGT	GTT	CCG	GCC	GCA	GAG	CAC	CGT	CTG	CGT	GAG	GAG	ATC	CTG			
												550					
ala	lys	phe	leu	his	trp	leu	met	ser	val	tyr	val	val	glu	leu			
GCC	AAG	TTC	CTG	CAC	TGG	CTG	ATG	AGT	GTG	TAC	GTC	GTC	GAG	CTG			
												560					570
leu	arg	ser	phe	phe	tyr	val	thr	glu	thr	thr	phe	gln	lys	asn			
CTC	AGG	TCT	TTC	TTT	TAT	GTC	ACG	GAG	ACC	ACG	TTT	CAA	AAG	AAC			
												lys					580
arg	leu	phe	phe	tyr	arg	pro	ser	val	trp	ser	lys	leu	gln	ser			
AGG	CTC	TTT	TTC	TAC	CGG	CCG	AGT	GTC	TGG	AGC	AAG	TTG	CAA	AGC			
												590					600
ile	gly	ile	arg	gln	his	leu	lys	arg	val	gln	leu	arg	glu	leu			
ATT	GGA	ATC	AGA	CAG	CAC	TTG	AAG	AGG	GTG	CAG	CTG	CGG	GAG	CTG			

## FIGURE 53 (cont.)

														610																													
ser	glu	ala	glu	val	arg	gln	his	arg	glu	ala	arg	pro	ala	leu																													
TCG	GAA	GCA	GAG	GTC	AGG	CAG	CAT	CGG	GAA	GCC	AGG	CCC	GCC	CTG																													
														620															630														
leu	thr	ser	arg	leu	arg	phe	ile	pro	lys	pro	asp	gly	leu	arg																													
CTG	ACG	TCC	AGA	CTC	CGC	TTC	ATC	CCC	AAG	CCT	GAC	GGG	CTG	CGG																													
														640																													
pro	ile	val	asn	met	asp	tyr	val	val	gly	ala	arg	thr	phe	arg																													
CCG	ATT	GTG	AAC	ATG	GAC	TAC	GTC	GTG	GGA	GCC	AGA	ACG	TTC	CGC																													
														650															660														
arg	glu	lys	arg	ala	glu	arg	leu	thr	ser	arg	val	lys	ala	leu																													
AGA	GAA	AAG	AGG	GCC	GAG	CGT	CTC	ACC	TCG	AGG	GTG	AAG	GCA	CTG																													
														670																													
phe	ser	val	leu	asn	tyr	glu	arg	ala	arg	arg	pro	gly	leu	leu																													
TTC	AGC	GTG	CTC	AAC	TAC	GAG	CGG	GCG	CGG	CGC	CCC	GGC	CTC	CTG																													
														680															690														
gly	ala	ser	val	leu	gly	leu	asp	asp	ile	his	arg	ala	trp	arg																													
GGC	GCC	TCT	GTG	CTG	GGC	CTG	GAC	GAT	ATC	CAC	AGG	GCC	TGG	CGC																													
														700																													
thr	phe	val	leu	arg	val	arg	ala	gln	asp	pro	pro	pro	glu	leu																													
ACC	TTC	GTG	CTG	CGT	GTG	CGG	GCC	CAG	GAC	CCG	CCG	CCT	GAG	CTG																													
														710															720														
tyr	phe	val	lys	val	asp	val	thr	gly	ala	tyr	asp	thr	ile	pro																													
TAC	TTT	GTC	AAG	GTG	GAT	GTG	ACG	GGC	GCG	TAC	GAC	ACC	ATC	CCC																													
														730																													
gln	asp	arg	leu	thr	glu	val	ile	ala	ser	ile	ile	lys	pro	gln																													
CAG	GAC	AGG	CTC	ACG	GAG	GTC	ATC	GCC	AGC	ATC	ATC	AAA	CCC	CAG																													
														740															750														
asn	thr	tyr	cys	val	arg	arg	tyr	ala	val	val	gln	lys	ala	ala																													
AAC	ACG	TAC	TGC	GTG	CGT	CGG	TAT	GCC	GTG	GTC	CAG	AAG	GCC	GCC																													
														760																													
his	gly	his	val	arg	lys	ala	phe	lys	ser	his	val	ser	thr	leu																													
CAT	GGG	CAC	GTC	CGC	AAG	GCC	TTC	AAG	AGC	CAC	GTC	TCT	ACC	TTG																													

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## FIGURE 53 (cont.)

770														780	
thr	asp	leu	gln	pro	tyr	met	arg	gln	phe	val	ala	his	leu	gln	
ACA	GAC	CTC	CAG	CCG	TAC	ATG	CGA	CAG	TTC	GTG	GCT	CAC	CTG	CAG	
790															
glu	thr	ser	pro	leu	arg	asp	ala	val	val	ile	glu	gln	ser	ser	
GAG	ACC	AGC	CCG	CTG	AGG	GAT	GCC	GTC	GTC	ATC	GAG	CAG	AGC	TCC	
800														810	
ser	leu	asn	glu	ala	ser	ser	gly	leu	phe	asp	val	phe	leu	arg	
TCC	CTG	AAT	GAG	GCC	AGC	AGT	GGC	CTC	TTC	GAC	GTC	TTC	CTA	CGC	
820															
phe	met	cys	his	his	ala	val	arg	ile	arg	gly	lys	ser	tyr	val	
TTC	ATG	TGC	CAC	CAC	GCC	GTG	CGC	ATC	AGG	GGC	AAG	TCC	TAC	GTC	
830														840	
gln	cys	gln	gly	ile	pro	gln	gly	ser	ile	leu	ser	thr	leu	leu	
CAG	TGC	CAG	GGG	ATC	CCG	CAG	GGC	TCC	ATC	CTC	TCC	ACG	CTG	CTC	
850															
cys	ser	leu	cys	tyr	gly	asp	met	glu	asn	lys	leu	phe	ala	gly	
TGC	AGC	CTG	TGC	TAC	GGC	GAC	ATG	GAG	AAC	AAG	CTG	TTT	GCG	GGG	
860														870	
ile	arg	arg	asp	gly	leu	leu	leu	arg	leu	val	asp	asp	phe	leu	
ATT	CGG	CGG	GAC	GGG	CTG	CTC	CTG	CGT	TTG	GTG	GAT	GAT	TTC	TTG	
880															
leu	val	thr	pro	his	leu	thr	his	ala	lys	thr	phe	leu	arg	thr	
TTG	GTG	ACA	CCT	CAC	CTC	ACC	CAC	GCG	AAA	ACC	TTC	CTC	AGG	ACC	
890														900	
leu	val	arg	gly	val	pro	glu	tyr	gly	cys	val	val	asn	leu	arg	
CTG	GTC	CGA	GGT	GTC	CCT	GAG	TAT	GGC	TGC	GTG	GTG	AAC	TTG	CGG	
910															
lys	thr	val	val	asn	phe	pro	val	glu	asp	glu	ala	leu	gly	gly	
AAG	ACA	GTG	GTG	AAC	TTC	CCT	GTA	GAA	GAC	GAG	GCC	CTG	GGT	GGC	
920														930	
thr	ala	phe	val	gln	met	pro	ala	his	gly	leu	phe	pro	trp	cys	
ACG	GCT	TTT	GTT	CAG	ATG	CCG	GCC	CAC	GGC	CTA	TTC	CCC	TGG	TGC	



## FIGURE 53 (cont.)

940  
 gly leu leu leu asp thr arg thr leu glu val gln ser asp tyr  
 GGC CTG CTG CTG GAT ACC CGG ACC CTG GAG GTG CAG AGC GAC TAC  
 950  
 ser ser tyr ala arg thr ser ile arg ala ser val thr phe asn  
 TCC AGC TAT GCC CGG ACC TCC ATC AGA GCC AGT GTC ACC TTC AAC  
 960  
 970  
 arg gly phe lys ala gly arg asn met arg arg lys leu phe gly  
 CGC GCC TTC AAG GCT CGG AGG AAC ATG CGT CGC AAA CTC TTT GGG  
 980  
 val leu arg leu lys cys his ser leu phe leu asp leu gln val  
 GTC TTG CGG CTG AAG TGT CAC AGC CTG TTT CTG GAT TTG CAG GTG  
 990  
 1000  
 asn ser leu gln thr val cys thr asn ile tyr lys ile leu leu  
 AAC AGC CTC CAG ACG GTG TGC ACC AAC ATC TAC AAG ATC CTC CTG  
 1010  
 leu gln ala tyr arg phe his ala cys val leu gln leu pro phe  
 CTG CAG GCG TAC AGG TTT CAC GCA TGT GTG CTG CAG CTC CCA TTT  
 1020  
 1030  
 his gln gln val trp lys asn pro thr phe phe leu arg val ile  
 CAT CAG CAA GTT TGG AAG AAC CCC ACA TTT TTC CTG CGC GTC ATC  
 1040  
 ser asp thr ala ser leu cys tyr ser ile leu lys ala lys asn  
 TCT GAC ACG GCC TCC CTC TGC TAC TCC ATC CTG AAA GCC AAG AAC  
 1050  
 1060  
 ala gly met ser leu gly ala lys gly ala ala gly pro leu pro  
 GCA GCG ATG TCG CTG GGG GCC AAG GGC GCC GCC GGC CCT CTG CCC  
 1070  
 ser glu ala val gln trp leu cys his gln ala phe leu leu lys  
 TCC GAG GCC GTG CAG TGG CTG TGC CAC CAA GCA TTC CTG CTC AAG  
 1080  
 1090  
 leu thr arg his arg val thr tyr val pro leu leu gly ser leu  
 CTG ACT CGA CAC CGT GTC ACC TAC GTG CCA CTC CTG GGG TCA CTC

## FIGURE 53 (cont.)

1100 1110  
 arg thr ala gln thr gln leu ser arg lys leu pro gly thr thr  
 AGG ACA GCC CAG ACG CAG CTG AGT CGG AAG CTC CCG GGG ACG ACG  
 1120  
 leu thr ala leu glu ala ala ala asn pro ala leu pro ser asp  
 CTG ACT GCC CTG GAG GCC GCA GCC AAC CCG GCA CTG CCC TCA GAC  
 1130 1132  
 phe lys thr ile leu asp OP  
 TTC AAG ACC ATC CTG GAC TGA TGGCCACCCGCCACAGCCAGGCCGAGAGCAGA  
 CACCAGCAGCCCTGTCACGCCGGGCTCTACGTCCCAGGGAGGGAGGGGCGGCCACACCC  
 AGGCCCGCACCGCTGGGAGTCTGAGGCCTGAGTGAGTGTTTGGCCGAGGCCTGCATGTCC  
 GGCTGAAGGCTGAGTGTCGGCTGAGGCCTGAGCGAGTGTCAGCCAAGGGCTGAGTGTC  
 CAGCACACCTGCCGTCTTCACTTCCCCACAGGCTGGCGCTCGGCTCCACCCCAGGGCCAG  
 CTTTTCYTCACCAGGAGCCCGGCTTCCACTCCCCACATAGGAATAGTCCATCCCCAGATT  
 CGCCATTGTTACCCYTCGCCCTGCCYTCTTTGCCTTCCACCCCCACCATCCAGGTGGA  
 GACCCTGAGAAGGACCCTGGGAGCTCTGGGAATTTGGAGTGACCAAAGGTGTGCCCTGTA  
 CACAGGCGAGGACCCTGCACCTGGATGGGGGTCCCTGTGGGTCAAATTCGGGGGAGGTGC  
 TGTGGGAGTAAAATACTGAATATATGAGTTTTTCAGTTTTTGRAAAAAAAAAAAAAAAAAAA  
 AAAAAAAAAA